

to further mutations, as well as to the constancy of their elementary characters.

NEW YORK BOTANICAL GARDEN.

## A KEY TO THE NORTH AMERICAN SPECIES OF RUSSULA.—I

BY F. S. EARLE

The Russulas are among our most abundant and attractive mushrooms. They are common everywhere in woodlands but seldom occur in open fields. The number of species is very great and many of them are conspicuous for their brilliant coloring. Bright reds, yellows, greens and purples are frequent among them, while other species appear in the less striking whites and browns. Many of the species are very hot and peppery to the taste, while a few are acrid or nauseous. This with their brilliant coloring has led to the belief that they are poisonous. In most cases the peppery taste disappears on cooking but in some the disagreeable flavors persist so as to render them unpalatable if not unwholesome. There is no evidence that any of the species are dangerously poisonous, like the deadly Amanitas, and it is probably prudent to eat of any of the species that are not unpalatable.

In studying the Russulas it is important to note carefully the characters of the lamellæ, whether equal or heterophyllous, forked or simple, whether the interspaces are veined or ribbed or smooth, and any changes in color either on maturity or when cut or injured. The taste and odor should also be carefully noted as also the color of the spores, whether white, bright yellow or ochraceous.

The first attempt at bringing together descriptions of our American species was by MacAdam (*Journ. Myc.* 5: 58-64, 135-141. 1889). This series of papers was unfortunately discontinued after twenty-five species had been described. McIlvaine and MacAdam (*One Thousand American Fungi*, 185-213. 1900) give descriptions of forty-five species. Peck in the Reports of the New York State Museum and in botanical journals has de-

scribed as new some twenty-seven species. In the following key a synopsis is given of seventy-seven species and varieties that have been reported from North America. It is probable that some species have been omitted, since the literature has not yet been exhaustively examined, and in some cases species are doubtless referred to the wrong section owing to imperfect descriptions. Any further notes or any corrections will be thankfully received by the writer.

## KEY TO THE SECTIONS OF THE GENUS

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|--|------------------------|----|
| 1. Lamellae equal ; pileus with a separable pellicle.                            | Sec. 5, FRAGILES.      |    |
| Lamellae unequal, heterophyllous ; pellicle adnate or none.                      |                        | 2. |
| 2. Margin of pileus conspicuously striate.                                       | Sec. 4, HETEROPHYLLAE. |    |
| Margin of pileus even, not striate.  |                        | 3. |
| 3. Pileus dry from the first, cuticle breaking areolately, scaly, pruinose, etc. | Sec. 3, RIGIDAE.       |    |
| Pileus moist or viscid, smooth, cuticle not breaking.                            |                        | 4. |
| 4. Lamellae conspicuously forking, slightly heterophyllous.                      | Sec. 2, FURCATAE.      |    |
| Lamellae conspicuously heterophyllous, seldom forking.                           | Sec. 1, COMPACTAE.     |    |

## KEY TO THE NORTH AMERICAN SPECIES

## SECTION 1, COMPACTAE

- |  |                                 |    |
|--|---------------------------------|----|
| 1. Pileus white or pallid.                                 |                                 | 2. |
| Pileus cream-color or tinted.                              |                                 | 3. |
| Pileus brown or fuliginous ; lamellae darkening or drying. |                                 | 4. |
| 2. Lamellae distant ; stipe 2-6 cm.                        | <i>R. delica</i> Fr.            |    |
| Lamellae crowded ; stipe 1-2 cm.                           | <i>R. brevipes</i> Pk.          |    |
| 3. Lamellae and flesh changing to brown when wounded.      | <i>R. compacta</i> Frost.       |    |
| Lamellae and flesh unchanging.                             | <i>R. cremoricolor</i> Earle.   |    |
| 4. Lamellae and flesh changing to reddish when wounded.    | <i>R. nigricans</i> (Bull.) Fr. |    |
| Lamellae and flesh unchanging.                             | <i>R. adusta</i> (Pers.) Fr.    |    |

## SECTION 2, FURCATAE

- |  |                                |    |
|--|--------------------------------|----|
| 1. Pileus white, pallid or slightly tinted.      |                                | 2. |
| Pileus greenish or brownish green or olivaceous. |                                | 3. |
| Pileus some shade of red, at least when young.   |                                | 6. |
| 2. Flesh blackening when wounded.                | <i>R. sordida</i> Pk.          |    |
| Flesh white, not blackening.                     | <i>R. basifurcata</i> Pk.      |    |
| 3. Stipe brighter green than pileus.             | <i>R. viridipes</i> Bann & Pk. |    |
| Stipe white or whitish.                          |                                | 4. |

- |  |   |
|--|---|
| 4. Lamellae subdistant, thick.<br>Lamellae crowded, narrow.  | <i>R. furcata</i> (Pers.) Fr.<br>5.   |
| 5. Lamellae often forking; pileus yellowish green, acrid.<br>Lamellae sometimes forking; pileus brownish green, mild.<br>Lamellae rarely forking; pileus olivaceous. | <i>R. aeruginascens</i> Pk.<br><i>R. crustosa</i> Pk.<br><i>R. olivascens</i> Fr. |
| 6. Pileus blood red; lamellae crowded, narrow.<br>Pileus lighter, often pallid with age.   | <i>R. sanguinea</i> Fr.<br>7.   |
| 7. Lamellae subdistant, broad; taste mild.<br>Lamellae crowded or subcrowded.  | <i>R. subdepallens</i> Pk.<br>8.  |
| 8. Taste mild.<br>Taste acrid.   | <i>R. depallens</i> Fr.<br>9.   |
| 9. Pileus and lamellae spotted.<br>Pileus and lamellae not spotted.  | <i>R. sardonica</i> Fr.<br><i>R. rosacea</i> Fr.                                  |

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## NOTES ON THE LOCAL FLORA

BY EDWARD W. BERRY

While the following list contains no additions to the New Jersey flora, it is believed that the stations are, for the most part, new and worth recording, more especially as the rapid spread of suburban residences and manufacturing establishments in this section of the State is fast obliterating what beautiful bits of watercourse or swampland remain.

*Eriophorum gracile* Koch. Atlantic\*: Hammonton.

*Orontium aquaticum* L. Passaic: near Passaic. Bergen: near Garfield.

*Erythronium albidum* Nutt. Bergen: near Garfield.

*Salomonina commutata* (R. & S.) Britton. Bergen: banks of Passaic River opposite Passaic.

*Cypripedium parviflorum* Salisb. Passaic: Great Notch. Bergen: Carlton Hill.

*Castanea dentata* (Marsh.) Borkh. Atlantic: Hammonton.

*Aristolochia Serpentaria* L. Bergen: near Garfield.

*Silene Caroliniana* Walt. Passaic: Great Notch.

\*The name of the county is placed first, followed by the colon.